



GOVERNOR Michael L. Parson

CONSERVATION COMMISSION

Don C. Bedell Steven D. Harrison Mark L. McHenry Wm. L. (Barry) Orscheln

DIRECTOR

Sara Parker Pauley

XPLOR STAFF

Bonnie Chasteen Les Fortenberry Alexis (AJ) Joyce Angie Daly Morfeld Noppadol Paothong Marci Porter Laura Scheuler Matt Seek David Stonner Stephanie Thurber Cliff White

Xplor (ISSN 2151-8351) is published bimonthly. It is a publication of the Missouri Department of Conservation, 2901 West Truman Boulevard, Jefferson City, M0 (Mailing address: P0 Box 180, Jefferson City, M0 65102.) Subscription free to Missouri residents (one per household); out of state \$5 per year; out of country \$8 per year. Please allow 6–8 weeks for first issue. Notification of address change must include both old and new address (send mailing label with the subscriber number on it) with 60-day notice. Preferred periodical postage paid at Jefferson City, Missouri, and at additional entry offices. Postmaster: Send correspondence to Xplor Circulation, P0 Box 180, Jefferson City, M0 65102-0180. Phone: 573-751-4115, ext. 3856 or 3249.

Copyright © 2021 by the Conservation Commission of the State of Missouri. Vol. 12, No. 3. May/June 2021 issue printed by LSC Communications in April 2021 in Liberty, Missouri. Printed in the USA.

Send editorial comments to: **Mailing address:** *Xplor Magazine*, PO Box 180, Jefferson City, MO 65102-0180; **Email:** *Xplor@mdc.mo.gov.* **Please note:** *Xplor* does not accept unsolicited article queries, manuscripts, photographs, or artwork. Any unsolicited material sent will not be returned.

Equal opportunity to participate in and benefit from programs of the Missouri Department of Conservation is available to all individuals without regard to their race, color, religion, national origin, sex, ancestry, age, sexual orientation, veteran status, or disability. Questions should be directed to the Department of Conservation, PO Box 180, Jefferson City, MO 65102, 573-751-4115 (voice) or 800-735-2966 (TTY), or to Chief, Public Civil Rights, Office of Civil Rights, U.S. Department of the Interior, 1849 C Street, NW, Washington, D.C. 20240.



We recycle. You can, too! Share Xplor with friends.

ON THE COVER

Pipevine swallowtail

by Noppadol Paothong

FUN THINGS TO DO AND GREAT PLACES
TO DISCOVER NATURE

DISCOVER



BALTIMORE ORIOLES BEGIN BUILDING NESTS.

It takes about a week to weave their dangly, sock-like homes.







Gooseberries, raspberries, and mulberries ripen in June.

Xplor SUMMER FUN AT AN MDC NATURE CENTER.

> **KEEP AN EYE OUT FOR BLACK BEARS** if you live in the Ozark region. They're browsing for berries, too.



Looking for more ways to have fun outside? Find out about Discover Nature programs in your area at mdc.mo.gov/events.

DON'T KNOW?

Jump to Page 21 to find out.



......

- 1 My stems look like paddles.
- 2 My leaves are mere bumps.

- 1 My spines foil pickers ...
- 4 ... who still spread my stickers.





BACKYARD BUTERFLIES

by Bonnie Chasteen

USE XPLOR'S MINI FIELD GUIDE TO DISCOVER 10 OF MISSOURI'S MOST COMMON BUTTERFLIES - THAT ARE ANYTHING BUT ORDINARY.

hat's your favorite butterfly? The big, bold pipevine swallowtail? Or maybe the tiny tailedblue? Whatever their size, butterflies are basically insects. They have six legs and two pairs of wings. But everything from their life cycle to their eye-popping beauty makes them seem like magical creatures from another realm. Let's get to know 10 Missouri butterflies you're likely to see enchanting your backyard this summer.

But First. Make This Field Guide

- 1 Cut out the next two pages along the dotted lines.
- 2 Fold each cutout down the middle.
- 3 Stack the cutouts with the pages in numerical order.
- 4 Staple the cutouts together along the middle between pages 8 and 9.
- 5 You're ready to search for butterflies!

Zebra swallowtail MDC DISCOVER NATURE

mdc.mo.gov

YOU DISCOVER BUTTERFLIES



A MINI FIELD GUIDE TO 10 LOVELY LEPIDOPTERA

16

1

3

(ABBAGE WHITE



gobble up garden

cabbages. But the

in the garden, too.

adult is a nectar-sipping

pollinator, so it helps out

Accidentally introduced from Europe more than 100 years ago, this winter-hardy butterfly is one of the first to appear in spring.

PICKY ABOUT PLANTS

Bet you didn't know this:
Butterflies can taste with their feet! Why? So they know immediately what kinds of plants they've landed on. This helps them quickly find the kind of host plants their eggs and caterpillars need to thrive.

You probably know that monarch caterpillars can only survive on milkweed plants.
Other kinds of butterflies have their own host plants, too.
Throughout this guide, you'll learn the kinds of plants each featured butterfly needs for its eggs and caterpillars. Planting host plants will keep butterflies fluttering around your yard, summer after summer.



X

S(ALED FOR FLIGHT

Butterflies and moths belong to a group of insects called Lepidoptera (leh-puh-dahp-tehr-uh). This means "scale wing." Scales are the colored "dust" that rubs off on your fingers when you touch a butterfly's wing. These scales protect and insulate the beautiful bugs and help the flow of air along their wings as they fly.



MORE THAN MONAR(HS MIGRATE

Monarchs are famous for flying from central Mexico to Canada and back every year. Turns out some other kinds of butterflies fly south for the winter, too, although not as far.

How do other butterflies survive winter? They stay snug in their eggs or cocoons, often nestled in leaf litter. This is why it's important to leave fall leaves in your yard until spring. Last fall's leaves may harbor this spring's butterflies!





(Louded Sulphur



These wide-spread pollinators are on the menu for birds and other insect-eaters.

love peas, beans,

and clover.

15

2

MASTERS OF (HANGE



A butterfly starts life as a tiny egg laid on or near a particular kind of plant. After a few days, a hungry little caterpillar pops out. It chomps and chomps its host plant, growing and changing its appearance until it's a mature larva. Then it attaches to a twig or other sturdy structure and sheds its skin. The remaining soft body forms a protective shell called a chrysalis or a cocoon.







EASTERN TIGER SWALLOWTAII



Adults sip nectar from blazing star, buttonbush, and other blooming plants. Look for the bright green caterpillars on apple, cherry, and tulip trees.

> When disturbed, the tiger forked gland that puts off predators.

swallowtail caterpillar rears back and sticks out a stinky, orange,



Adults visit just about any kind of flower and often sip moisture from mud puddles. Look for eggs and caterpillars on members of the carrot family, including dill.

Some gardeners plant extra dill to keep black swallowtails from laying eggs on their carrot plants.

Inside the chrysalis, the larva turns to goo.

Over the next several days, different groups of cells change the goo into eyes, wings, and other adult body parts. When it's ready, the butterfly wriggles out. It pauses, letting its wet, wrinkled wings "bloom" into their final shape. Then, it flies off to find a mate and start its life cycle — known as metamorphosis (met-uh-more-fo-sis) — all over again.









12

5

MIGRATOR

SA(HEM SKIPPER



Skippers are a kind of butterfly named for their skipping flight.

COMMON BU(KEYE



Like monarchs, these butterflies and their caterpillars harbor yuckytasting toxins from their host plants.

X

10

Adults love thistles and other flowers but will also sip tree sap and the juices of rotting fruit — yum! Caterpillars live inside tents they build out of silk and eat leaves of sunflower-family members.

> When seeking mates, American lady males will defend their territories against other males.

EASTERN TAILED-BLUE

Common in prairies and yards, adults flutter low to the ground looking for small flowers to sip. Caterpillars feed on the flowers, seeds, and leaves of clovers.

> Adults spend the night in places where they basked in the sunlight.

> > 11

HA(KBERRY EMPEROR

6

While the hackberry

tree may host this butterfly's caterpillars, the adults have a taste for salt and may land on your arm to sample your sweat. But don't feel too special. Other favorite flavors include animal droppings and mud.

> The forked features on the caterpillar's head resemble miniature deer antlers.

MONAR(H

Check milkweed stems and leaves for tiny white eggs or striped caterpillars.

> Keep monarchs coming back to your yard every year by planting native milkweeds. Check for local native plant sales at GrowNative.org.



Jniversity of Georgia, Bugwood.org; Eastern tailed-blue caterpillar. 1.0; Hackberry emperor butterfly and caterpillar: Donna Brunet

Wild critters don't make Father's Day cards for their top-notch pops. But what if they did? Here's what they might say ...

by Matt Seek

Dear Dad,

No other animal hunts so hard to find food for his family. I've watched you wiggle into narrow nooks to nab rodents, scamper up trees to inspect bird nests, and dive underwater to catch fish. You're an all-terrain predator, Pops! Even when you're exhausted from hunting, you still find the strength to carry me if I'm too tired to walk. But my favorite is when you let me ride

go swimming! Love, Little American Mink

on your back when you

Dear Pop,

Most kids love
piggyback rides from
their dad, but you go
the extra mile. Ever since
Mom glued her eggs to your
back — all 150 of them! —
you've been carrying us around
wherever you go. Staying on
the move makes it hard for
pesky predators to eat us. In a
few weeks, I'll hatch and swim
away forever. But before I do,
I wanted to let you know how
much I appreciate you!

That's _ me! Love, Little Giant Water Bug



Dear Dad.

Keeping Mom fed while she sat on our nest must have been a ton of work. After all, she's about a third bigger than you! And when my brothers and sisters and I hatched, you had even more hungry beaks to feed. But I love watching you dive from high in the sky - WHOOSH! - to knock unsuspecting birds out of the air for our dinner.



Love. Little Peregrine

Dear Pa,

I know most furry fathers don't stick around to raise their kids. But I'm glad you did. Mom needs all the help she can get! She keeps having babies. There were five in my litter, and we were her third litter this year! I like when you help her groom me and carry me by the scruff of my neck when we move to a new nest.

Love, Little Prairie Vole



Dear Father,

You're the best actor I know! If a hungry coyote gets too close to our nest, you skitter away and pretend to have a broken wing. You put on quite an act, thrashing about and dragging your wing. The gullible coyote thinks it's going to score an easy meal, but all the while, you're leading it far from me and the other chicks. When we're out of danger, your wing magically "heals," and you fly away to AWWW... safety. Bravo, Father! I was so cute! Love, Little Killdeer



mammals make milk. But I know that's not true. Ever since I hatched, you've been feeding me milk. And it's good that you do. Mom can't make enough for me and my sister! When I'm hungry, I stick my beak inside yours and a yummy liquid flows down my throat. It comes from your crop, that pouch at the end of your food tube. It must be good for me. My feathers are already starting to sprout!

Love, Little Mourning Dove

Howl's it going, Pop?

You're such a playful parent 1 couldn't pass up the chance to crack a joke. I'm glad you play with me so much. When you let me pounce on your back and chew on your ears, I know you're helping me get stronger and training me to catch prey, like rodents and rabbits. Yum! I can't wait to go hunting with you, so I can try out everything you've taught me.

Love, Little Coyote



1 know you were worrying about my safety long before I was born. Why else would you build 12 different nests and only use one of them? Mom says the extra nests are decoys to keep predators from finding our real home. I hope they work! Thanks for doing so much to keep Love, Little Sedge Wren our family safe.





Dear Pa,

After using your tail to sweep out a nest for Mom's eggs, you went a fin further. You stood guard over our nest to protect me and my siblings from schools of egg-slurping sunfish. And you swished your tail over us — over and over again to keep algae from growing and provide plenty of oxygen for us to breathe. Thanks for being a fin-tastic father!

Love, Little Catfish



Thanks for working so hard to bury this dead bird that we live on. I heard it took you nearly a whole night of digging! And thanks for feeding me meat from the bird when I get hungry. It's nearly unheard of for an insect to care for its young. It's even rarer for both parents to pitch in. I guess you and Mom aren't so ordinary!

Love, Little American Burying Beetle



Dear Pops,

When I grow up, I hope I'm as brave as you! While Mom sat on the nest, you stayed a few waddles away to keep her safe. If a fox or raccoon wandered too close, you scared it away with angry hisses and honks. Once our little flock of fuzzy goslings hatched, you and Mom herded us to a nearby marsh where the water kept us safe from predators.

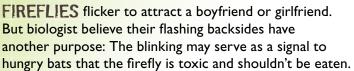
Love, Little Canada Goose

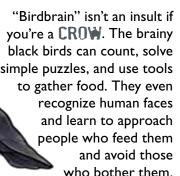




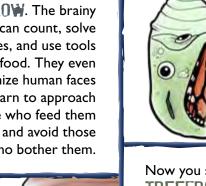


YOUR SUIDE TO ALL THE UMUSUAL UNIQUE.
AND UMBELIEVABLE
STUFF THAT GOES ON IN NATURE

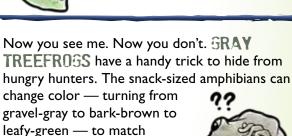




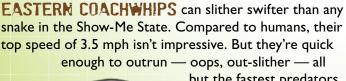
CLIFF SWALLOWS gather mouthfuls of mud — but not to eat. (That would be gross.) The birds use the blobs to build nests on bluffs, bridges, and barns. It takes about 1,000 beakfuls of mud — and as many flights to the mud puddle — to finish a single nest.



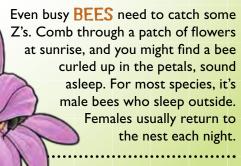
Once it forms its protective cocoon, a **CATERPILLAR'S** body quickly dissolves into a gooey soup of cells and proteins. Special cells act like a recipe book to remix the goo and form legs, wings, antennas, and other butterfly body parts.



gravel-gray to bark-brown leafy-green — to match whatever they are crawling on.



but the fastest predators
and prey.





HERE'S WHAT YOU DO
Cut

Cut or break a popsicle stick in half so that you get two sticks that are the same length. You can place the stick on the edge of a table and push down to break it. If you want a smoother edge, use sturdy scissors or a pocketknife to cut the stick in half.

Pull out
2 inches of
tape and wrap it around one of the

2 inches of tape and wrap it around one of the sticks about a quarter of an inch from the cut end. Do the same thing for the other stick.

Use scissors to cut a thin strip of plastic film about the same length and width as the sticks.

Sandwich the film between the two

layers of tape.

sticks. Be sure the film is pinched between the

Pull out
3 inches of
tape. Wrap it
around both si

around both sticks about a quarter of an inch from the cut ends to hold the call together.

HOW TO USE YOUR CALL

Squirrels make a variety of barks, chatters, whistles, and squeals. You can use your call to make two different squirrelly sounds. Both will cause nearby squirrels to creep closer to see what's up.

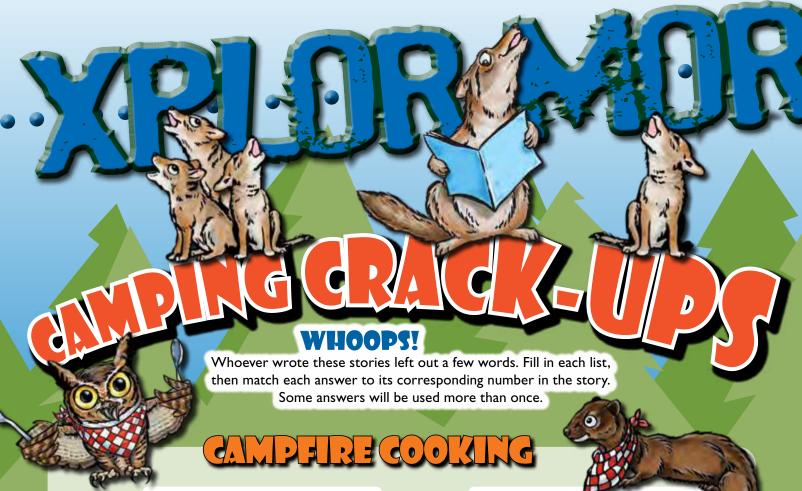
Squirrel Distress Call

Squirrels make high-pitched squeals and barking calls when they're scared or annoyed. To mimic these sounds, hold the taped end of your call and blow gently between the sticks. If you don't get a sound at first, try turning the call over. Also try squeezing the taped end of the call to slightly spread the sticks apart. This will change the call's pitch. Experiment and practice, and soon you'll sound like an upset squirrel.

Gnawing Sound

When squirrels gnaw on hickory nuts, walnuts, and acorns, their teeth make a grinding sound on the nuts' shells. To mimic this sound, run the edge of the popsicle stick down the threads of a wood screw.





- 1. Adjective
- 2. Color
- 3. Food (plural)
- 4. Taste
- 5. Animal
- 6. Name of a holiday
- 7. Food
- 8. Verb ending in -ing
- 9. Type of tree
- 10. Adjective

- 11. Food
- 12. Food
- 13. Name of a spice
- 14. Color
- 15. Number
- 16. Adjective
- 17. Color
- 18. Animal (plural)
- 19. Body part
- 20. Emotion

Cooking over a campfire is $(\underline{1})!$ My favorite meal to fix is $(\underline{2})$ $(\underline{3})$ with $(\underline{4})$ sauce. It smells like wet $(\underline{5})$, but it tastes like $(\underline{6})$ $(\underline{7})$.

To cook the sauce, you must build a (8) fire. Use wood from (9) trees so the fire will be (10). Add (11), (12), and (13) into a pan. Place the pan on glowing (14) coals, and stir the mixture exactly (15) times. If you stir too much, the sauce will turn (16).

Cook the (3) directly over the fire until they turn (17). If you accidentally drop the (3) in the dirt, don't worry. Just fling them into the woods for (18) to eat.

The next time you go camping, try this recipe. I guarantee it will make your (19) (20).



- 1. Exclamation (e.g., Wow!)
- 2. Person's first name
- 3. Noun
- 4. Person's last name
- 5. Animal
- 6. A spreadable food
- 7. Loud noise
- 8. Body part
- 9. Adjective
- 10. Color
- 11. Verb ending in -ing
- 12. Noun

- 13. Adjective
- 14. Emotion
- 15. Animal sound
- 16. Loud noise
- 17. Body part
- 18. Color
- 19. Taste
- 20. Food
- 21. Number
- 22. Adjective
- 23. Animal (plural)
- 24. Body part

"(1)!" I turned around just in time to see my friend (2) trip over a (3) and go tumbling toward (4)'s Creek. Like a (5) greased with (6), he slid down the bank until ... (7)! He landed (8)-first in (9) (10) mud at the edge of the water.

When I quit (11), I yelled down: "Do you want me to toss you a (12)?"

"Nope," (2) yelled back. "That was (13)! You try it."

With a (14) (15), I dove down the bank. (16)! I landed (17)-first in the mud next to (2). I sat up and spit out a glob of (18) goo that tasted like (19) (20). Yum!

We must have slid down that bank (21) times. Afterward, we were covered in so much mud, we looked like (22) (23). And though I washed and washed, to this day, I still find mud in my (24).

IF YOU WANT TO DO EACH STORY MORE THAN ONCE, PHOTOCOPY THE PAGES BEFORE FILLING IN THE LISTS.

The eastern prickly pear's thick pads are actually flattened stems. Tiny, soft, cone-shaped bumps on new pads are the cactus's true leaves. At the base of each leaf bump, spines and tiny, hairlike bristles form. These make it hard for

animals and people to pick the cactus's yellow flowers and juicy red fruits. At the same time, bristles stick to feet and fur, helping spread the cactus to dry, desertlike places statewide. Learn more at mdc.mo.gov/field-guide.



SUBSCRIBE ONLINE

mdc.mo.gov/xplor Free to Missouri Households



It's hard to tell if this daredevil is landing on or launching from the petals of a purple prairie coneflower. One thing's for sure — it's probably not far from a swamp milkweed plant. True to its name, it lives near, eats, and lays eggs on swamp milkweed leaves. This explains why it's marked like monarchs and other bugs that lay their eggs on bad-tasting milkweeds. They all have bright colors that warn bug-eaters to bug off! Learn more at mdc.mo.gov/field-guide.